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Water Quality Regulation and California Water Rights

An Analysis of Takings Issues

*by Deborah L. Martin**

I. Introduction

California's water tends to fall where and when it is needed the least. The majority of the state's precipitation falls during the winter months in northern areas of the state. The state's population centers, and much of its irrigated agriculture, are in the central and southern portions of the state. These areas need water most during the dry summer months.¹ The state is also prone to extended droughts, further parching the cities and agriculture. Large reclamation projects, described below, have been built by both the state and federal governments to quench this thirst. Most of the water used in California is delivered through these projects, and is allocated by permit or contract with either the state or the United States Department of the Interior, Bureau of Reclamation.²

These large-scale developments for water delivery have enabled and encouraged the irrigated agriculture-centered economy in the Central Valley and the population growth in the Los Angeles basin. This growth has come at great expense to the environment. The impounding and rerouting of water from the northern region of the state to the central and southern regions upset the natural hydrological balance, resulting in serious degradation of water quality in the northern rivers and the San Francisco Bay/Sacramento-San Joaquin River Delta (hereinafter "Bay/Delta"). Efforts to preserve and restore the environment by altering the water system have been met with opposition from those interests benefitted by the current system.

This note will discuss the water quality standards proposed by the Environmental Protection Agency (hereinafter "EPA") for the Bay/Delta and the Central Valley Project Improvement Act (hereinafter "CVPIA") as examples of proposed solutions to the environmental problems exacerbated by poor water quality and the opposition with which they are met. It will describe the developed water system and its effect on the environment, discuss the proposed solutions to those environmental problems, and then address the claims that these proposed solutions result in unconstitutional takings of property.

II. Background

A. Reclamation Projects

There are two major water reclamation and delivery projects in California: the Central Valley Project (hereinafter "CVP") and the State Water Project (hereinafter "SWP"). Both pump water from the Sacramento-San Joaquin River Delta. The Sacramento and San Joaquin Rivers meet at the Delta and flow west into the San Francisco Bay. The rivers form an estuary mixing fresh water with marine water through a series of bays, channels, shoals, and marshes. Covering approximately 1600 square miles, this area is habitat for over 120 fish species, and is one of the largest areas of waterfowl habitat in the United States.³

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1. CALIFORNIA DEPARTMENT OF WATER RESOURCES, CALIFORNIA WATER: LOOKING TO THE FUTURE, BULLETIN 160-87, 21 (1987) [hereinafter "DWR BULLETIN"]

2. See generally Cal. Water Code § 1375 (West 1984), 16 U.S.C. § 5902-7, 8, 11

The State Water Project delivers about 2.4 million acre-feet annually (afa)⁴ through almost 700 miles of canals, pipelines, and tunnels through and over 3000 feet of hills and mountains to southern California.⁵ The water for the SWP comes from Lake Oroville on the Feather River and surplus flows in the Sacramento-San Joaquin Delta.⁶ The amount of surplus flow water available from the Delta is dependent on hydrologic conditions and contingent on the satisfaction of water quality standards in the Delta.⁷

The Central Valley Project captures the waters of the Sacramento and San Joaquin Rivers and transports them to farmers in California's massive, arid Central Valley.⁸ Eighty-three percent of California's water is used for irrigated agriculture,⁹ and the Central Valley is the largest block of irrigable land in California, encompassing 6 million acres of irrigable land, 4.7 million of which are actually irrigated.¹⁰ The CVP typically supplies approximately 7 million afa to Central Valley irrigation districts servicing 2.8 million acres of land.¹¹

These reclamation projects have been a major factor in making California and the Central Valley the most diverse and productive agricultural region in the world. The state produces over half of the nation's fruits, nuts, and vegetables on only 3 percent of the nation's farmland,¹² and exports \$4.66 billion in farm products.¹³ In 1991, the gross income from farming in California was \$17.9 billion.¹⁴ When considered in terms of the multiplier effect, the impact of agriculture on the economy of California as a whole is enormous. Farming and related activities generate \$63.1 billion or 90.5 percent of California's \$697 billion Gross State Product. The food and fiber system also creates, directly and indirectly, 9.78 percent of total employment in the state. Agriculture has an even greater impact on the economy of the Central Valley. Farming and farm related industries directly and indirectly create nearly one-third of all jobs in the Central Valley and generate about one third of personal income. Direct and indirect sales from farming add \$50.8 billion to the Central Valley economy, and the industries produce 27.2 percent of value-added dollars in the Central Valley.¹⁵

B. Environmental Effects

The water diversion from and resulting degradation of the Bay/Delta have created a human-made drought in an area which once supported a unique and diverse ecosystem.¹⁶ Pumping water through the projects has reduced the amount of water flowing through the San Francisco Bay by about half.¹⁷ In addition, the projects' powerful pumps can, and in drought years often do, reverse stream flows in the Delta. In 1987, reverse flows occurred on about 280 days; in 1988, they occurred on about 260 days.¹⁸ These reverse flows are problematic because they confuse migrating fish, pull small fish from hatcheries into the pumping plants, and draw salt water from the bay into Delta marshes, increasing their salinity.¹⁹

Although not solely to blame, the projects are largely responsible for the dramatic decline of Bay/Delta fish and waterfowl. The four seasonal Chinook salmon runs which migrate through the Bay/Delta have been decimated. The winter run returning to spawn dropped from more than 200,000 fish in the early sixties to only 341 in 1993, and the fish is now listed as an endangered species. The spring run dropped from 25,400 in the 1980s to 2,700 in 1993, and that species soon may be listed as well. The 1993 fall run levels were less than 50 percent of those in the 1980s, and the late fall run dropped approximately 30 percent in the same period.²⁰ Other fish species are also in decline: the Delta smelt has been listed as a threatened species, and striped bass have declined from 3 million to fewer than 600,000. The five most abundant species in the San Francisco Bay, the longfin smelt, white catfish, American shad, threadfin shad, and Sacramento split-tail, are also in serious decline.²¹ The water projects also have effected profoundly on California's waterfowl. The Bay/Delta and the Central Valley wetlands comprise 60 percent of the critical wintering habitat of the Pacific Flyway's waterfowl. Ninety-six percent of these wetlands have been lost since 1850.²² The California duck population dropped from 7 million in 1980 to 2 million in 1985.²³

3. 59 Fed. Reg. 810-01 (1994) (to be codified at 40 C.F.R. pt. 131) (proposed Jan. 6, 1994).

4. An acre-foot is the amount of water it takes to cover a square acre of land to a depth of one foot, approximately 325,851 gallons, enough for the domestic needs of a family of five for one year.

5. JOSEPH L. SAX ET AL., *LEGAL CONTROL OF WATER RESOURCES*, 11, 621 (2d ed. 1991).

6. DWR BULLETIN, *supra* note 1, at 24.

7. *Id.*

8. SAX ET AL., *supra* note 5, at 647-48. For an excellent discussion of the CVP, see Harrison C. Dunning, *Confronting the Environmental Legacy of Irrigated Agriculture in the West: The Case of the Central Valley Project*, 23 *ENTL. L.* 943 (1993).

9. DWR BULLETIN, *supra* note 1, at 5.

10. *Id.* at 11.

11. SAX ET AL., *supra* note 5, at 648.

12. HAROLD O. CARTER & GEORGE GOLDMAN, *UNIVERSITY OF CALIFORNIA*

DIVISION OF AGRICULTURE AND NATURAL RESOURCES, LEAFLET NO. 21,517, THE MEASURE OF CALIFORNIA AGRICULTURE. ITS IMPACT ON THE STATE ECONOMY, at 2 (1992).

13. *Id.* at 3.

14. *Id.* at 2.

15. *Id.* at 5.

16. Deborah Moore & W.R. Zach Willey, *Water in the American West: Institutional Evolution and Environmental Restoration in the 21st Century*, 61 *U. COLO. L. REV.* 775 (1991).

17. See generally Jane Kay, *Dying Fishery: Sign of Nature in Trouble*, S.F. *EXAMINER*, Oct. 26, 1993 at A8.

18. *Id.*

19. *Id.*; see also DWR BULLETIN, *supra* note 1, at 69.

20. *Id.*

21. *Id.*

22. Moore & Willey, *supra* note 16, at 775.

III. Proposed Solutions

A. The Central Valley Project Improvement Act

In 1991, the fifth year of a severe drought in California, the CVPIA was introduced in the Senate to address environmental damage caused by the CVP.²⁴ The Act was signed into law by then President George Bush on October 30, 1992.²⁵ Among other provisions, the CVPIA deems use of water for fish and wildlife protection, mitigation, and restoration to be equal in priority to irrigation and domestic use,²⁶ and places fish and wildlife enhancement at a priority level one step lower than irrigation and domestic use.²⁷ (Although not clearly stated in the Act, this distinction between protection, mitigation, and restoration on one level, and enhancement on another, implies that the project is to be used for environmental enhancement going beyond mere reparation of damages caused by the CVP.²⁸) The CVPIA further directs the Secretary of the Interior to "operate the Central Valley Project to meet all obligations under State and Federal law, including but not limited to the Federal Endangered Species Act."²⁹ The CVPIA states as a general goal the doubling of anadromous fish runs in all CVP rivers (excluding the San Joaquin which has been largely dewatered) by the year 2002.³⁰ The CVPIA also dedicates 800,000 afa of CVP water to fish and wildlife purposes,³¹ and mandates that water be set aside to satisfy tribal water claims³² and ameliorate wildlife and wetland areas.³³ In total, the CVPIA dedicates 1.2 to 1.3 million afa to environmental purposes.

B. EPA-Proposed Water Quality Standards

The Bay/Delta is subject to the water quality control jurisdiction of the California State Water Resources Control Board (hereinafter "SWRCB").³⁴ However, the SWRCB has not met its obligations to set water quality standards under section 303 of the Federal Water Pollution Control Act (hereinafter

"Clean Water Act").³⁵ Section 303(c) of the Clean Water Act provides that states must establish and revise water quality standards and that those standards are to be reviewed by the EPA. California did promulgate such standards in 1978; those standards were approved with reservations by the EPA. However, the 1978 standards failed to meet the goal of sustaining the striped bass population and failed to prevent the decline of several other fish species.³⁶ Further, the state failed to remedy the plan's shortcomings by making changes to the 1978 plan at the triennial reviews required by the Clean Water Act. California developed a new plan in 1991 which the EPA disapproved because it also failed to protect the designated uses of the Bay/Delta.³⁷

California has yet to promulgate a water plan for the Bay/Delta that meets the requirements of the Clean Water Act. Section 303(c)(4) of the Act requires that when a state fails to promulgate a satisfactory plan, the Administrator of the EPA must prepare and publish proposed regulations establishing water quality standards to be implemented within 90 days.³⁸ There exists some debate regarding the authority of the federal government to implement rules affecting water allocations as water allocations are traditionally matters within a state's sovereignty. This federal power issue is beyond the scope of this Note. EPA standards will be assumed either to pre-empt state law or simply to stand in the place of the standards California is required to promulgate under section 303 of the Clean Water Act as if the state had promulgated the standards itself.³⁹

In January 1994, the EPA proposed rules establishing three sets of federal criteria to protect the designated uses of the Bay/Delta. These criteria are: 1) salinity criteria protecting the estuarine habitat and other designated fish and wildlife uses; 2) salinity criteria to protect the fish spawning designated use in the lower San Joaquin River; and, 3) salmon smolt survival index criteria to protect the fish migration and cold freshwater habitat-designated uses in the estuary.⁴⁰ It is not necessary to delve into the technical

23. *Id.*

24. CVPIA, S. Res. 2313, 102d Cong., 1st Sess., 137 CONG. REC. S 2313 (1991) (enacted).

25. Reclamation Projects Act, Pub. L. No. 102-575 § 3406, 106 Stat. 4601, 4714 (Oct. 30, 1992).

26. *Id.* § 3406(a)(1), 106 Stat. 4601, 4714.

27. *Id.* § 3406(a)(2), 106 Stat. 4601, 4714-15.

28. Dunning, *supra* note 8, at 961.

29. Pub. L. No. 102-575, § 3406(b), 106 Stat. 4601, 4714 (Oct. 30, 1992).

30. *Id.* § 3406(g), 106 Stat. 4601, 4725.

31. *Id.* § 3406(b)(2), 106 Stat. 4601, 4715.

32. *Id.* § 3406(b)(23), 106 Stat. 4601, 4720.

33. *Id.* § 3406(d)(1)-(2), 106 Stat. 4601, 4722-23.

34. 59 Fed. Reg. 810-01 (1994) (to be codified at 50 C.F.R. pt. 131).

(proposed Jan. 6, 1994).

35. *Id.*, Federal Water Pollution Control Act § 303(c)(4), 33 U.S.C. § 1313(c)(4) (1984).

36. See 59 Fed. Reg. 810-10, §§ A-C (1994) (to be codified at 50 C.F.R. pt. 131) (proposed Jan. 6, 1994).

37. The Clean Water Act requires that states designate uses for bodies of water and attain water quality compatible with those designated uses. Bay/Delta-designated uses include use as a fish hatchery, fish migration route, cold water fish habitat, and other fish and wildlife uses.

38. Clean Water Act § 303(c)(4), 33 U.S.C. § 1313(c)(4) (1984). See also *Mississippi Comm'n on Natural Resources v. Costle*, 625 F.2d 1269 (1980).

39. See Kristen Dornity, *Will Federal Environmental Regulation Be Permitted To Infringe On State Vested Water Rights?* 11 UCLA J. ENV'T. L. & POL'Y 113 (1992).

40. 59 Fed. Reg. 810-01 (1994) (to be codified at 50 C.F.R. pt. 131) (proposed Jan. 6, 1994).

details of these standards for this discussion of their effect on water rights. However, it is important to note that the EPA proposed that these criteria be implemented primarily through increases in Delta outflow. The need for additional outflow is estimated at 540,000 afa on average and 1.1 million afa in critically dry years. The EPA expects that the reductions in water deliveries necessary to increase Delta outflows will be allocated so that agricultural users will bear 80 percent of the reductions, and urban users will bear the remaining 20 percent.⁴¹

IV. Claims of Unconstitutional Takings

A. The CVPIA

1. *Impairment of Contract Claims and Claims of Taking of Property Without Compensation in Violation of The Fifth Amendment*

Irrigation and water districts have been in existence in California since the Irrigation District Act was passed in 1897.⁴² These districts are state agencies having broad authority, including the power of eminent domain, the power to levy taxes and sell bonds, and the power to enter into contracts. In California, districts contract with the state and federal governments for the delivery of water through the SWP and CVP.⁴³ Most of these contracts are extremely long term, spanning forty or more years.

The CVPIA-mandated water set-asides and the Act's requirement that the CVP comply with the Endangered Species Act in effect create a "regulatory drought" for water contractors by reducing the amount of CVP water available for delivery. Several irrigation districts have brought suit against the Bureau of Reclamation alleging, *inter alia*, that compliance with the CVPIA results in an interference with their contract rights without due process and a taking of their property without compensation in violation of the Fifth Amendment of the United States Constitution.⁴⁴

The federal government's motions to dismiss for failure to state a claim on these Fifth Amendment issues were granted by the District Court on very narrow grounds. Westlands Water District's claim of impairment of contract was dismissed on grounds of collateral estoppel as to the nature of the right conferred by the contract. The takings issue was dismissed as to all plaintiffs on jurisdictional grounds, as the

court held that the claim should have been brought in the Court of Claims.⁴⁵ Although dismissed by the court on procedural grounds, these issues remain unresolved and worthy of discussion as the extent to which water contracts may be affected by subsequent legislation. Specifically how environmental protection legislation impacts a large number of powerful water interests controlling vast volumes of water.

Westlands Water District, the named plaintiff in the case discussed above, obtained a judgment from the United States District Court for the Eastern District of California in 1986 compelling the Department of the Interior (hereinafter "DOI") to perform its 1963 contract with the District for the delivery of CVP water.⁴⁶ The judgment was stipulated to by Westlands and the DOI in a case regarding the availability of subsidized project water for application to excess lands under the Reclamation Reform Act of 1982. The judgment provides that the contract between Westlands and the DOI is a "valid, enforceable and implementable contract entitling the District through the end of 2007 to water and other service as specified therein," and further provided that "the United States shall perform the 1963 contract".⁴⁷

Plaintiff Westlands has twice sought enforcement of the judgment to protect its 1963 water contract against subsequent legislation. In a 1990 action, *Barcellos and Wolfsen v. Westlands Water District*, Westlands argued that the judgment required the DOI to sell water for excess lands at the subsidized contract rate rather than at full cost.⁴⁸ The court held that the stipulated judgment was confined to its facts, and that the challenged legislation requiring payment of full cost for some of the water was not in conflict with the contract.⁴⁹ In a 1993 action, *Barcellos v. Wolfsen*, Westlands argued that the Endangered Species Act and the CVPIA were unconstitutional violations of due process as applied, because they violated a contractual priority to water.⁵⁰ The court found that the Westlands contract did not confer an absolute vested right to water immune to subsequent legislation.⁵¹ These cases form the collateral estoppel basis for the court's granting of the instant motions to dismiss. The district court ruled that Westlands could not relitigate the claim that the right provided by their contract is an absolute vested right to water which cannot, under any condition, be altered by the Bureau of Reclamation's reasonable actions taken pursuant to valid subsequent legislation.⁵² The court held that the only claims Westlands

41. *Id.*

42. Now codified at CAL. WATER CODE § 20,500 (West 1984).

43. CAL. WATER CODE §§ 34,000-38,501 (West 1984). For a history of Westlands and its contracts and politics, see Bryan Wilson, *Westlands Water District and Its Federal Water: A Case Study of Water District Politics*, 7 STAN. ENVTL. L.J. 187 (1987/1988).

44. *Westlands Water Dist. v. Department of Interior*, Case No. CV-F-93-5327 OWW SSH (E.D. Cal. filed Feb. 11, 1993).

45. *Id.*

46. *Barcellos & Wolfsen v. Westlands Water Dist.*, 899 F.2d 814, 819 (1990).

47. *Id.*

48. *Id.* at 820.

49. *Id.* at 826.

50. *Barcellos v. Wolfsen*, CV-F-79-106 OWW (C.D. Cal. unpublished memorandum decisions June 18, 1993, September 9, 1993).

51. *Id.*

52. *Westlands Water Dist. v. Department of Interior*, CV-F-93-5327

can relitigate on this issue are: 1) the validity of the CVPIA and Section 7 of the Endangered Species Act; and, 2) whether the Bureau has correctly complied with those acts so that the Bureau's actions in reducing deliveries to plaintiffs are not arbitrary or capricious.⁵³

2. Analysis

In determining whether the CVPIA's effect on the irrigation districts' contracts with the DOI constitute an impermissible taking or violation of due process, the initial inquiry looks to whether the contracts with the Bureau vest a protectable property right in the districts.⁵⁴ Since it has long been held that "[r]ights against the United States arising out of a contract with it" are protectable property,⁵⁵ the nature of that right must be evaluated to determine specifically whether it is subject to subsequent legislation.

In *Bowen v. Public Agencies*, the Supreme Court recognized precedent that contracts with the sovereign are subject to subsequent legislation absent an express waiver of sovereign authority.⁵⁶ The Court recognized that while the government has the power to enter into contracts which do confer vested rights and has the duty to honor those rights, courts have declined to find that "a sovereign forever waives the right to exercise one of its sovereign powers unless it expressly reserved the right to exercise that power in the contract."⁵⁷ The Court stated that the government retains the power to legislate, and contracts are subject to that power unless it is "surrendered in unmistakable terms."⁵⁸ The Court further stated that "contracts should be construed, if possible, to avoid foreclosing exercise of sovereign authority."⁵⁹

In *Peterson v. Department of the Interior*, the Ninth Circuit applied the above language from *Bowen v. Public Agencies* to contracts for water, in the context of the

Reclamation Reform Act's provisions regarding excess lands.⁶⁰ The court found that contractual arrangements, including those to which a sovereign itself is party: 1) remain subject to subsequent legislation;⁶¹ 2) should be construed, if possible, to avoid foreclosing of the sovereign authority;⁶² and, 3) should be interpreted against the backdrop of the legislative scheme authorizing the contracts, with ambiguities to be interpreted in light of policies underlying that legislation.⁶³ The court found that there exists no absolute requirement that Congress must expressly reserve in a controlling statute the right to amend that statute or government contracts authorized by it.⁶⁴

In *Peterson*, the contract at issue contained a clause allowing that, in the event Congress should change the reclamation laws, "the United States agrees, at the option of the District, to negotiate amendments of appropriate articles of this contract, all consistently with the provision of such repeal or amendment."⁶⁵ The court read this provision not as a reservation of the right to negotiate a contract that would be contrary to the law as amended or repealed, but an option to either renegotiate the affected terms of the contract to avoid inconsistency with the changed law, or terminate the contract.⁶⁶ *Peterson* is established precedent in the Ninth Circuit and elsewhere.⁶⁷ However, the Ninth Circuit has cautioned against "too liberal an interpretation of the residual sovereign power of the government to override its contractual commitments" so as not to "eviscerate the government's power to bind itself to contracts."⁶⁸

The rule that ambiguities in contract terms are to be resolved in favor of retention of Congress' power to legislate can be read as either an alternative to the requirement of an express waiver of that power or as an element of that requirement. Either interpretation presents separation of powers issues. Such problems

OWW SSH at 20 (E.D. Cal. unpublished Memorandum Opinion and Order Re: Defendants and Defendants-in-Intervention Motion to Dismiss Feb. 11, 1994).

53. *Id.* at 19.

54. *Peterson v. Department of Interior*, 899 F.2d 799, 807 (9th Cir. 1990).

55. *Lynch v. United States*, 292 U.S. 571, 579 (1934). Although Justice Brandeis, in holding that War Risk Insurance contracts were property, was probably not considering environmental regulations, the opinion states that "[a]s Congress had the power to authorize the Bureau of War Risk Insurance to issue them, the due process clause prohibits the United States from annulling them, unless, indeed, the action taken falls within the federal police power or some other paramount power." *Id.* The Court recognized that supervening conditions can authorize Congress to abrogate contracts in the exercise of the state's police or other power.

56. *Bowen v. Public Agencies Opposed to Social Sec. Entitlement*, 477 U.S. 41, 52 (1986).

57. *Id.* (quoting *Merrion v. Jicarilla Apache Tribe*, 455 U.S. 130, 148 (1982)).

58. *Id.* The Court did note that Congress' exercise of the reserved power is limited in that Congress does not have the power to take away property already acquired under the operation of a charter, or to deprive

a "corporation of the fruits actually reduced to possession of contracts lawfully made," or to repudiate its own debts which constitute property to the lender simply in order to save money. *Id.* None of these limitations are applicable in the context of this Note.

59. *Id.* at 52-53.

60. *Peterson*, 899 F.2d 799, 807.

61. *Id.* at 807 (quoting *Bowen*, 477 U.S. at 52).

62. *Id.*

63. *Id.* (citing *Federal Housing Authority v. The Darlington*, 358 U.S. 84, 87-88 (1958)).

64. *Id.* at 803.

65. *Peterson*, 899 F.2d at 809.

66. *Id.* at 811.

67. See, e.g., *Acacia Villa v. Kemp*, 774 F. Supp. 1240 (C.D. Cal. 1990), *aff'd sub nom. Alpine Ridge Group v. Kemp*, 955 F.2d 1382 (9th Cir. 1992), *rev'd en clifur gruards sub nom. Cisneros v. Alpine Ridge Group*, 113 S.Ct. 1989 (1993).

68. *Madera Irrigation Dist. v. Hancock*, 935 F.2d 1397, 1401 (9th Cir. 1993) (government did not violate district's rights by changing terms of contract upon renewal; term in renewal contract reserving right to modify contract pursuant to environmental legislation did not render the contract illusory).

are unavoidable when an executive agency purports to contractually waive the legislative branch's authority to legislate. There is precedent for viewing a contracting agency operating under the executive as wholly separate from the legislative arm of the government. In *Horowitz v. United States*, the Supreme Court held that the "United States when sued as a contractor cannot be held liable for an obstruction to the performance of the particular contract resulting from its public and general acts as a sovereign."⁶⁹ However, it has not been resolved in either the Ninth Circuit or the Supreme Court whether an agency can immunize a party to a contract against Congress' power to legislate.⁷⁰ This would amount to allowing an executive agency to waive Congress' legislative power.

In *Transohio Savings Bank v. Office of the Thrift Supervision*, the D.C. Circuit has held that agencies do not have the authority to waive Congress' legislative power unless that authority has been delegated to the agency in "unmistakable terms."⁷¹ The court, however, did not reach the issue of whether such a delegation was constitutionally permissible. The plaintiff savings and loan had contracted with the Federal Savings and Loan Insurance Corporation, and Congress subsequently passed legislation affecting the contract. Plaintiff argued that the "government" could not repudiate its obligations. The court responded that "Transohio's repeated references to 'the government' as the other party to the contract obscure the difficult questions the thrift's constitutional claims pose: whether the executive agencies entered into a contract that bound Congress, and whether the executive agencies had the power to enter into a contract that bound Congress."⁷² To answer these questions, the court looked to the language of the contract itself. Applying the doctrine that waiver of sovereignty must be expressed in unmistakable terms, the court found no evidence that the contract term at issue was binding on Congress.⁷³ The court then considered whether the agency had the power to bind Congress, even if an unmistakable waiver of sovereignty was included in the contract. The court stated "we strongly doubt that such a promise would be binding on Congress. That agency promise would be ultra vires and unenforceable."⁷⁴ The court "assume[d] without expressing a view that Congress might, in a contract, surrender aspects of its regulatory authority—though the Supreme Court has recently said that a state may not contract away 'essential attributes of its sovereignty,' and long ago suggested that Congress may not

either."⁷⁵ The court further stated that it "assume[d] again] without expressing a view that Congress might delegate to an agency the power to contract away Congress' regulatory power—though the Supreme Court has never considered [the constitutional validity of] such a congressional delegation."⁷⁶ The court added that Congress cannot be found to have delegated such power unless the delegation was explicit.⁷⁷

These statements, although not binding on the Ninth Circuit, do reinforce the Ninth Circuit's observation in *Madera Irrigation District v. Hancock* that "[I]t is doubtful that the Secretary of the Interior could, by contract, waive the right of Congress to pass laws."⁷⁸ Thus, however the contract terms are interpreted, the contracts cannot waive Congress' power to enact legislation. Such a contract term would be void as an ultra vires act on the part of the Bureau as Congress has made no express delegation of authority to the Bureau to waive Congress' regulatory power. In the absence of such a delegation, the contract terms cannot be read to waive the legislative power of the sovereign. Even if such delegation were to be made, its constitutionality would be questionable. Thus, the CVPIA does not interfere unconstitutionally with the water rights of parties who have contracted with the DOI for CVP water. Thus, the contracts are not immune to legislation affecting their terms.

B. EPA-Proposed Water Quality Standards

1. Federal Takings Law

Noted water law scholar Joseph Sax commented that, given the state of takings law as it stood in 1990,

the only new water law regulation that would prima facie raise a taking problem is a release requirement: requiring existing appropriators to make releases in order to augment instream flows for public purposes such as ecosystem protection and public recreation. If the appropriator's property right were an unqualified one, such a requirement might well be viewed as 'physical invasion,' and would thus be compensable.⁷⁹

However, the taking problem Professor Sax feared is not raised by the EPA's proposed water quality standards. The proposed standards are a de facto release requirement. Although they do not require releases of water under the control of the rights holders, the water quality standards effectively remove water from their

69. 267 U.S. 458, 461 (1925).

70. *Westlands Water Dist. v. Department of Interior*, CV-F-93-5327 OWW SSH (E.D. Cal. unpublished Memorandum Opinion and Order Re: Defendants and Defendants-in-Intervention Motion to Dismiss February 11, 1994).

71. . 967 F.2d 598,621-622

72. *Id.* at 617.

73. *Id.* at 618.

74. *Id.* at 620.

75. *Id.* at 621 (citations omitted).

76. *Id.*

77. *Id.*

78. *Madera*, 985 F.2d at 1407 (Hall, J., concurring).

79. Joseph L. Sax, *The Constitution, Property Rights and the Future of Water Law*, 61 U. COLO. L. REV. 257, 263 (1990).

reach. But, the fact that the right to water in California is not an unqualified property right allows such redistribution of water without compensation to the existing rights holders.

*Lucas v. South Carolina Coastal Council*⁸⁰ is the most recent Supreme Court decision on the takings question. In *Lucas*, the Supreme Court noted that takings questions are normally decided on an ad hoc basis, dependent on the facts of each case which determine whether a regulation "goes too far" and constitutes a taking.⁸¹ The Court held, however, that there are two categories of regulatory action which result in prima facie takings, not requiring a case-specific inquiry into the public interest advanced by the regulation in question.⁸² Those two categories are "regulations that compel the property owner to suffer a physical invasion of his property," and regulations which "den[y] all economically beneficial or productive use of land."⁸³ Although *Lucas* holds that the public interests advanced by the challenged legislation are not to be considered in these two situations, it also holds that no compensation is due if the property rights held are not absolute. The Court stated:

Where the State seeks to sustain regulation that deprives land of all economically beneficial use, we think it may resist compensation only if the logically antecedent inquiry into the nature of the owner's estate shows that the proscribed use interests were not part of his title to begin with.⁸⁴

The Court further stated:

Where "permanent physical occupation" of land is concerned, we have refused to allow the government to decree it anew (without compensation), no matter how weighty the asserted "public interests" involved, though we assuredly *would* permit the government to assert a permanent easement that was a pre-existing limitation upon the landowner's title. . . . Any limitation so severe cannot be newly legislated or decreed (without compensation), but must inhere in the title itself, in the restrictions that background principles of the State's law of property and nuisance already place upon land ownership.⁸⁵

These holdings frame the question of takings in

terms of state property law. There is no prima facie taking requiring compensation if the title or right is not absolute under state law. In situations where there is a pre-existing limitation upon the right, compensation is not automatically required by the Fifth Amendment.

Where the right abridged is not absolute, the takings test formulated in *Lucas* requires analysis of, "among other things, the degree of harm to public lands and resources, ...the social value of the claimant's activities and their suitability to the locality in question, ...and the relative ease with which the alleged harm can be avoided through measures taken by the claimant and the government...."⁸⁶ In balancing these factors, "[t]he fact that a particular use has long been engaged in by similarly situated owners" may indicate the absence of a common-law prohibition, but "changed circumstances or new knowledge may make what was previously permissible no longer so."⁸⁷ This balancing test is not a radical departure from traditional takings analysis as applied to natural resources.⁸⁸

Thus, under *Lucas*, to determine whether or not a natural resources use restriction constitutes a taking requiring compensation, it is necessary not only to look at "background principles of the State's law of property and nuisance"⁸⁹ to determine the extent of the property right held, but also to look at how courts have balanced the relevant factors in similar cases where the right has been determined not to be absolute. An outline of these two inquiries is set forth below.

2. State Background Principles of Property Law

In *Sierra Club v. Department of Forestry*, the court held that timber harvest plans for an old growth forest had been improperly approved, and restrictions to protect threatened animal species were held not to effect an unconstitutional taking of property.⁹⁰ The court determined that the regulation did not deny the owner all economically beneficial use of the forest land. In reaching this decision, the court discussed the possible takings problem inherent in wildlife protection regulations affecting the use of property. The court noted that "this [state appellate] district, the federal courts of appeals, and appellate courts in our sister states have generally rejected the claim that a state or federal statute enacted in the interest of protecting wildlife is unconstitutional because it curtails the uses to which real property may be put."⁹¹

The wildlife protection cases cited in *Sierra Club v.*

80. 112 S. Ct. 2886 (1992).

81. *Id.* at 2893 (quoting *Pennsylvania Coal Co. v. Mahon*, 260 S. Ct. 158, 160 (1922)).

82. *Id.*

83. *Id.*

84. *Id.* at 2899.

85. *Id.* at 2900 (citation omitted).

86. *Id.* at 2901.

87. *Id.*

88. See, e.g., Barry I. Pershkov, Robert F. Housman, In the Wake of *Lucas v. South Carolina Coastal Council*: A Critical Look at Six Questions Practitioners Should Be Asking, 23 ELR 10,008 (1993); Jill Dickey Protos, *Lucas v. South Carolina Coastal Council*: A Tramar on The Regulatory Takings Rubric Scale, 43 CASE W. RES. L. REV. 669 (1993).

89. *Lucas*, 112 S. Ct. at 2900.

90. 21 Cal. App. 4th 603, 613 (1993).

91. *Id.*

Department of Forestry include *Platt v. Philbrick*,⁹² in which the court held that all private property is subject to the state police power. The court in *Sierra Club* quotes *Platt*: "It is conceivable that private property in every fish and game district in the state might suffer some damage through the restrictions of the Fish and Game Code generally, but this is a damage which the property owner must bear in the interest of the public welfare."⁹³ In *Christy v. Hodel*, also cited in *Sierra Club*, the court found that no taking resulted from a regulation prohibiting a sheepherder from shooting bears which ate his sheep.⁹⁴ The court in *Sierra Club* interpreted the *Hodel* and *Platt* opinions as precedent for its decision that the owner of a forest inhabited by protected species is subject to regulations designed with the legitimate purpose of protecting those species. The court stated that contemporary wildlife management and environmental regulation would be difficult if not impossible if exercise of the state's police power constituted a prima facie unconstitutional taking of the land inhabited by protected species.⁹⁵

Most importantly, the *Sierra Club* court found that *Platt* and *Christy* demonstrate that wildlife protection regulation historically has been a part of the pre-existing state law of property for purposes of the *Lucas* takings analysis.⁹⁶ As support for its decision, the court stated that review had been denied in two cases which similarly rejected plaintiffs' takings arguments.⁹⁷ The *Sierra Club* decision sets an important precedent for analyzing takings claims under *Lucas* as the court interpreted the *Lucas* holding that property rights are limited by "background principles of the State's law of property"⁹⁸ as including principles that are not strictly laws of real property. Thus, it is necessary to look to California's background property laws relating to water rights in evaluating whether the EPA-proposed water quality standards will constitute a taking.

The background property laws of California, both common-law and statutory, make clear that California

water rights are far from absolute. In addition to federal restrictions, state water rights are subject to both the public trust doctrine and the reasonable and beneficial use requirement of the California Constitution. Rights to water are, in fact, usufructuary rights to the use of the water subject to limitations. The EPA-proposed water quality standards merely codify and make explicit these background limitations. Regulations which merely codify common law principles do not trigger a right to compensation under the Takings Clause.⁹⁹

a. The Reasonable Use Requirement

The water rights system in California evolved in a utilitarian manner as the economic development of the state required. Water law in California began as a common law riparian system. The riparian system was ill-suited to the needs of the state, and appropriative rights were recognized as hydraulic mining became increasingly profitable and valuable to the state's economy.¹⁰⁰ As the economic importance of mining diminished and the resulting damages to the state's waterways began to hinder other economic activity, the system evolved to recognize the importance of both riparian and appropriative rights.¹⁰¹ Water law scholars have observed that "[a]s economic conditions have changed, and as social goals have evolved, the Court has not hesitated to modify both the law and the water rights based on that law to facilitate California's economic growth and social well-being[.]"¹⁰² and that "change is the unchanging chronicle of water jurisprudence."¹⁰³ This is possible because California water rights are subject to the reasonable and beneficial use requirements of the California Constitution.¹⁰⁴ Article X, Section 2 provides an overriding constitutional limitation that water use must be "reasonable."¹⁰⁵ The reasonable and beneficial use requirement is a dynamic concept which is "variable according to conditions,"¹⁰⁶ and which historically has been subject to change with

92. *Platt v. Philbrick*, 8 Cal. App. 2d 27 (1935).

93. *Sierra Club*, 21 Cal. App. 4th at 613-14, (quoting *Platt*, 8 Cal. App. 2d at 31).

94. *Id.* at 614 (discussing *Hodel*, 857 F.2d 1324 (9th Cir. 1988)).

95. *Id.* at 614-15.

96. *Id.* at 616.

97. *Id.*; see *Sierra Club v. California Coastal Comm'n*, 12 Cal. App. 4th 602 (1993); *Moerman v. California*, 17 Cal. App. 4th 452 (1993).

98. *Lucas*, 112 S. Ct. at 2900.

99. *Id.* at 2901. See Lynda G. Cook, *Lucas and Endangered Species Protection: When "Take" and "Takings" Collide*, 27 U.C. DAVIS L. REV. 185 (1993) (arguing that the Endangered Species Act is a codification of background law and thus does not amount to an unconstitutional taking).

100. *Irwin v. Phillips*, 5 Cal. 140 (1855).

101. *People v. Gold Run Ditch Co.*, 66 Cal. 138 (1884); *Crandall v. Woods*, 8 Cal. 136 (1857).

102. Brian Gray, *In Search of Bigfoot: The Common Law Origins of Article X, Section 2 of the California Constitution*, 176 HASTINGS CONST. L.Q. 225, 238 (1989).

103. *Sax*, *supra* note 78, at 268.

104. *United States v. State Water Resources Control Bd.*, 182 Cal. App. 3d 82 (1986), *reh'g denied*, *petition for review denied* (1986) (holding State Water Resources Control Board has authority to enforce water quality requirements, and has authority to modify projects' permits; also holding SWRCB to have authority to curtail projects' diversions of water on the ground that the projects' use and diversion of the water had become unreasonable in light of changed circumstances revealed in new information; information regarding the adverse effects of the projects upon the Delta held to necessitate revised water quality standards)

105. CAL CONST. art. X, § 2. In pertinent part, this section reads

It is hereby declared that because of the conditions prevailing in this State the general welfare required that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water is to be prevented.... The right to water or to the use or flow of water...shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of diversion of water.

Id.

106. *United States v. Alpine Land & Reservoir Co.*, 697 F.2d 851,

the changing needs of the state.¹⁰⁷

Courts have held that "[w]hat constitutes reasonable water use is dependent upon not only the entire circumstances presented but varies as the current situation changes" and cannot be determined apart from "statewide considerations of transcendent importance."¹⁰⁸ Reasonable uses of water are inextricably tied to public policy, and thus previously established relative priorities of right are not controlling in light of changing definitions of reasonableness.¹⁰⁹ Existing uses of water may be found unreasonable as changing needs and circumstances change the definition of reasonableness. Water rights historically have been subject to reapportionment to reflect changes in public policy priorities. Examples of this dynamic are found in *Joslin v. Marin Municipal Water District*¹¹⁰ and *United States v. State Water Resources Control Board*.¹¹¹

In *Joslin*, the plaintiffs quarried rock and gravel deposited on their land by the flow of a creek. They had been engaged in this business for 22 years when the Marin Municipal Water District dammed the creek to create a reservoir upstream of the quarry. The plaintiff's water right was held to be limited by the constitutional mandate of reasonable use under Article X, Section 2. The California Supreme Court stated that the question of what is a reasonable use is question that "cannot be resolved *in vacuo* isolated from statewide considerations of transcendent importance."¹¹² The plaintiff's were thus not entitled to any compensation for their loss of water, as their use of water for gravel quarrying was unreasonable in light of the Municipal Water District's competing demands for the water.¹¹³ The supreme court held that the taking of the water right was justified by Article X, Section 2 of the California Constitution and was a valid exercise of the state's police power.¹¹⁴ In discussing the impact of *Joslin*, Professor Brian Gray wrote:

Interpreted narrowly, *Joslin* would be little more than a statement that egregiously wasteful uses of water violate Article X, Section 2. Or, the case may exemplify the balancing of competing interests required by the Constitution's reasonable use doctrine. Construed broadly, *Joslin* would stand as a pronouncement that Article X, Section

2 requires all water rights to be exercised in accordance with contemporary economic conditions and societal values. As these factors change and new demands for water arise, the state may adjust existing water rights to accommodate the relatively more valuable uses of the state's scarce water resources.¹¹⁵

Cases decided after *Joslin* indicate that the broad interpretation is proper. In *United States v. State Water Resources Control Board*, which arose out of the state's efforts to set new water quality standards for the Delta, the court held that the SWRCB had the power to modify permits for water use under its power, as all water rights are subject to the overriding constitutional limitation that water use must be reasonable.¹¹⁶ The court interpreted the reasonable use requirement broadly, finding that "changed circumstances revealed in new information about the adverse effects of the projects upon the Delta necessitated revised water quality standards" as "the Projects' use and diversion of the water had become unreasonable."¹¹⁷ The court held that "all permits of the projects are subject to the continuing authority of the Board to prevent unreasonable use," and that "[d]etermination of reasonable use depends upon the totality of the circumstances presented."¹¹⁸ The court further stated that in determining whether a use is reasonable, "some accommodation must be reached concerning the major public interests at stake: the quality of valuable water resources and transport of adequate supplies for needs southward," and that "[t]he decision is essentially a policy judgment requiring a balancing of the competing public interests."¹¹⁹

Water rights established under an earlier prioritization of uses are therefore changeable subject to the dynamics of societal priorities changing the definition of reasonableness. In recent times, priorities of use have expanded to include fish and wildlife preservation and enhancement as reasonable and beneficial uses. The legislature is authorized to further public policy by enacting legislation concerning what uses are reasonable, as long as the legislative enactments themselves are reasonable.¹²⁰ Such legislative definitions are to be given deference in the courts.¹²¹

855 (9th Cir. 1983).

107. *Joslin v. Marin Mun. Water Dist.*, 67 Cal. 2d 132 (1967) (water right previously considered beneficial/reasonable found to be so no longer in light of changed circumstances and competing demands, no right to use water except in accordance with reasonable/beneficial requirements of constitution).

108. *United States v. State Water Resources Control Bd.*, 182 Cal. App. 3d at 130 (quoting *Environmental Defense Fund v. East Bay Mun. Utility Dist.*, 26 Cal. 3d 183, 194 (1980)).

109. See, e.g., *Joslin*, 67 Cal. 2d at 132; *People ex rel. State Water Resources Control Bd. v. Forni*, 54 Cal. App. 3d 743 (1976) (ordering users to share equally in construction of a storage system for water where their use to protect vines from freezing had the effect of only the upstream user getting water).

110. 67 Cal. 2d 132 (1967).

111. 182 Cal. App. 3d 82 (1986) *reh'g denied*, petition for review denied (1986).

112. *Joslin*, 67 Cal. 2d at 140.

113. *Id.* at 137-38.

114. *Id.* at 144.

115. Gray, *supra* note 101, at 239.

116. *United States v. State Water Resources Control Bd.*, 182 Cal. App. 3d at 129.

117. *Id.* at 130.

118. *Id.*

119. *Id.*

120. CAL. CONST. art. X, § 2.

121. *California Trout v. State Water Resources Control Bd.*, 207

6. The Effect of the Public Trust Doctrine

The public trust doctrine is a fundamental doctrine of property law.¹²² It is a servitude which works as a sort of easement in favor of the public interest in access to water for traditional public purposes such as navigation, commerce, and fishing.¹²³ Protection of the environment has been recognized as a public trust use for a quarter of a century.¹²⁴

Property rights, including water rights, obtained from the state are subject to the public trust absent language in the grant instrument, deed, or lease indicating that the trust has been abrogated.¹²⁵ The holder can "claim no vested right to bar recognition of the trust or state action to carry out its purposes."¹²⁶ As such, these rights are subject to termination any time the use is found to interfere with public trust uses.¹²⁷

In *National Audubon Society v. Superior Court*, the California Supreme Court held that water rights are subject to the public trust.¹²⁸ The supreme court held that the public trust doctrine provides independent authority affecting current water law which must be considered in establishing or evaluating water rights and allocating water.¹²⁹ The supreme court found the public trust doctrine to be flexible, able to embrace uses beyond those traditionally recognized, and to encompass the growing concern for environmental preservation.¹³⁰ In holding that Los Angeles could not entirely divert streams feeding into Mono Lake (causing the water level of the lake to drop dramatically and increasing the salinity of the remaining water), the supreme court held that trust restrictions are applied not only to diversions and uses of navigable waters and the lands underlying them, but also to protect navigable waters from environmental damage caused by diversions from non-navigable tributaries.¹³¹ In *Audubon*, the supreme court held that the public trust operates to prevent "any party from acquiring a vested right to appropriate water in a manner harmful to the interests protected by the public trust."¹³² The supreme court did not, however, hold that the public trust doctrine could be used as a trump over California's water rights system. Rather, the public trust doctrine was held to co-exist with the existing water rights system.¹³³

The details of how this co-existence would operate were not laid out in this case. Later cases provide some indication as to how the public trust doctrine and the water rights system work together. For example, in *United States v. State Water Resources Control Board*,¹³⁴ consistency with the public trust doctrine was included in the court's reasonable use analysis. The court held that public trust uses must be balanced with water quality interests, water supply interests, and other factors in determining reasonableness under Article X, Section 2.

This view of the public trust doctrine was developed and applied in *Environmental Defense Fund v. East Bay Municipal Utility District*.¹³⁵ In that case, the defendant sought to divert water upstream of a stretch of the American River which supports a multitude of fish, wildlife, and vegetation species, and an important public recreational area. This case was decided by the Superior Court on remand from the California Supreme Court. In remanding this case, the supreme court held that the courts and the SWRCB had the authority under Article X, Section 2 to direct an appropriator to move its point of diversion downriver for the purpose of protecting instream uses of the river below the existing point of diversion.¹³⁶ The Superior Court held it was necessary to balance the public trust uses of environmental protection and public recreation against the interests of the public served by the utility district in a reasonably inexpensive and clean water supply. The court permitted the utility district's diversion provided that downstream flows were maintained in sufficient amounts to support the fish, wildlife, vegetation, and recreational area, thereby fulfilling the public trust servitude.¹³⁷

3. Balancing the Interests—The Need for a Physical Solution

The reasonable use requirement of Article X, Section 2 and the public trust doctrine are background principles of California's property law; combined, they render water rights usufructuary, qualified by the requirements of the doctrines. Thus, the EPA-proposed standards do not, under *Lucas*, effect a prima facie taking. Rather, the *Lucas* balancing test is to be

Cal. App. 3d 585, 622-25 (1989).

122. Harrison C. Dunning, *The Public Trust: A Fundamental Doctrine of American Property Law*, 19 ENVTL. L. 515 (1989).

123. *Id.*

124. *Marks v. Whitney*, 6 Cal. 3d 251 (1971).

125. *National Audubon Society v. Superior Court*, 33 Cal. 3d 419, cert. denied, 464 U.S. 977 (1983).

126. *Id.* at 440.

127. *Boone v. Kingsbury*, 206 Cal. 148 (1928). In this case, plaintiff obtained a lease from state for an oil well on submerged land on the condition that if the use was found to interfere with navigation or fishing, the well would be shut down.

128. *National Audubon Society*, 33 Cal. 3d at 445-46.

129. *Id.*

130. *Id.* at 434-35 (citing *Marks v. Whitney*, 6 Cal. 3d 259-60).

131. *Id.* at 437.

132. *Id.* at 445.

133. *Id.*

134. *United States v. State Water Resources Control Bd.*, 182 Cal. App. 3d 82 (1986), *reh'g denied*, *petition for review denied*, (1986).

135. Cal. Superior Court, Alameda County, Docket No. 425955 (unpublished opinion filed Jan. 2, 1990).

136. *Environmental Defense Fund v. East Bay Mun. Utility Dist.*, 26 Cal. 3d 183 (1980).

137. *Environmental Defense Fund v. East Bay Mun. Utility Dist.*, Cal. Superior Court, Alameda County, Docket No. 425955 (unpublished opinion filed Jan. 2, 1990).

applied.¹³⁸

The *Lucas* test requires the balancing of the value of the claimant's use, the degree of harm caused by that use, and the avoidability of that harm.¹³⁹ Cases concerning restrictions on coal mining illustrate the application of this test. Although decided five years before *Lucas*, *Keystone Bituminous Coal Association v. DeBenedictis* is an example of a challenge to a regulatory limitation on the use of a natural resource in which the court balanced the same factors the *Lucas* Court later deemed important.¹⁴⁰ In *Keystone*, the Court addressed a claim that a regulation restricting coal mining in sensitive areas, aimed at the prevention of land subsidence, effected a taking.¹⁴¹ The Court balanced the private right of the coal company to maintain its business and the benefit to the public of an available coal supply against the harm done to the land by the mining and the fact that further harm was unavoidable if unrestricted mining was allowed to continue in the sensitive areas.¹⁴² The Court held that the regulation did not constitute an unconstitutional taking as no private owner has the right to use property in a manner harmful to the public good. The Court reasoned that the purpose of the regulation (i.e., providing for the conservation of surface land) was justified, and that the regulation did not make it entirely impossible for the plaintiffs to profitably engage in their business, as mining was not restricted to the extent that it was made "commercially impracticable".¹⁴³

In applying this balancing test to the possible takings problem presented by the EPA-proposed water quality standards (the effect of which will be felt mainly by agricultural users), the value of the agricultural uses and their suitability to the region must be balanced against the harm to public resources caused by those uses and the relative ease with which the harm can be avoided through measures taken by the claimant and the government.¹⁴⁴ It is extremely difficult to weigh the enormous economic value of agriculture to California (not to mention the value of abundant and inexpensive produce) against the environmental good achieved by increased Delta outflows. Thus, the possibility of avoiding the harm caused by agricultural use of water is a key factor in this balancing.

California water law historically has been utilitarian in nature and receptive to physical solutions to such dilemmas.¹⁴⁵ Courts have regularly held that a scarcity of water necessitating its optimal utilization justifies the "taking" of a senior water right and compensating the holder of that right with a physical solution.¹⁴⁶ For example, the Imperial Irrigation District's excessive water deliveries to agricultural users was found to be wasting large amounts of water and causing environmental damage in the Salton Sea.¹⁴⁷ The SWRCB simply could have rescinded the district's water right as its use was unreasonable and wasteful. Instead, since much of the excess water could be conserved through a combination of operational and physical improvements to the delivery systems,¹⁴⁸ the Metropolitan Water District was allowed to make these improvements and use the water conserved.¹⁴⁹ In predicting the increased use of physical solutions, Professor Dunning observed:

As the pace of large-scale water development projects in the West slows, and as we are increasingly forced to look to mechanisms other than new water supply projects to balance supply and demand, the physical solution will likely become ever more important in western water law.¹⁵⁰

Colorado's use of a physical solution to its groundwater depletion problem is an example of a state addressing a scarcity problem in this way. Colorado initially tried to solve its groundwater scarcity problem by ordering its state engineer to strictly enforce the state's prior appropriation system.¹⁵¹ Strict enforcement, although constitutional, would have involved shutting down thousands of wells, thereby causing severe economic dislocation. There was strong opposition to this plan and administrative difficulties in implementing it.¹⁵² The Colorado legislature then enacted comprehensive water legislation more oriented to physical solutions.¹⁵³ The policy goal was to protect senior rights holders without displacing the junior rights holders.¹⁵⁴ The means to that end included limiting the rights of senior rights holders to reasonable methods of diversion and allowing junior rights hold-

138. *Lucas*, 112 S. Ct. at 2893, 2901; *supra* text accompanying notes 85-87.

139. *Id.*

140. *Keystone Bituminous Coal Ass'n v. DeBenedictis*, 480 U.S. 470 (1987).

141. *Id.* at 475-476.

142. *Id.* at 485.

143. *Id.* at 485-486, 491-492.

144. *LUCAS*, 112 S. Ct. at 2901.

145. See Harrison C. Dunning, *The Physical Solution in Western Water Law* 57 U. COLO. L. REV. 445 (1986).

146. See, e.g., *Erickson v. Queen Valley Ranch Co.*, 22 Cal. App. 3d

578 (1971), *People ex. rel. State Water Resources Control Bd. v. Forni*, 54 Cal. App. 3d 743 (1976), *Lodi v. East Bay Mun. Utility Dist.*, 7 Cal. 2d 316 (1936).

147. STATE WATER RESOURCES CONTROL BD., DECISION NO. 1600 (1984).

148. *Id.* at 3.

149. See MARC REISNER & SARA BATES, *OVERTAPPED OASIS*, 149-65 (1989).

150. Dunning, *supra* note 144, at 448 (footnotes omitted).

151. *Id.* at 465.

152. *Id.* at 465-466.

153. *Id.* at 466.

154. *Id.* at 467.

ers to initiate and implement plans that used innovative approaches to efficient delivery and conservation of water. These innovations included pooling of water resources, water exchange projects, substitute supplies of water, and development of new water sources.¹⁵⁵

Application of physical solutions in the Central Valley could mitigate the impact of the EPA-proposed water quality standards on the agricultural economy. Physical solutions could include the following: limiting rights holders to reasonable uses and methods of use (such as water-efficient crops and efficient delivery and irrigation); allowing water pooling agreements and exchange programs; subsidizing the application of existing conservation technologies (such as drip irrigation and improved sprinkler systems) for those uses which are found to be reasonable and sufficiently valuable to justify the cost; and, providing incentives to encourage development of new conservation technologies. A combination of legislative definitions of reasonable uses and methods of use, subsidies, and market-based incentives would allow reasonable agricultural uses to continue, thus minimizing economic impacts while conserving water for increased Delta outflows.

155. *Id.* at 467-468 (citing COLO. REV. STAT. § 37-92-103(9) (Supp. 1986)).